



JET PROPULSION LABORATORY
CALIFORNIA INSTITUTE OF TECHNOLOGY

REQUEST FOR PROPOSAL

REQUEST FOR PROPOSAL NO.: MRO-2005

FOR:

MARS RECONNAISSANCE ORBITER (MRO)

PROPOSALS ARE TO BE RECEIVED AT JPL NO LATER THAN:

Date: June 13, 2001

Local Time: 3:00 p.m.

COMMUNICATIONS IN REFERENCE TO THIS RFP

It is requested that any communication in reference to this RFP be in writing and directed to the attention of:

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Specimen Contract, dated April 24, 2001

GENERAL INSTRUCTIONS

1.0 PROPOSAL REQUIREMENT

The effort to be performed will be in accordance with the Specimen Contract; if you choose to submit more than one proposal for this effort, each proposal must be independently complete and under separate cover.

2.0 CONTRACT REQUIREMENT

The Basic Contract will be for Formulation Phase A/B of the Mars Reconnaissance Orbiter (MRO) flight system and will include priced options for full-scale development activities (Phases C/D and E). Proposers shall provide separate cost volumes for Phase A/B, Phase C/D and Phase E.

Through these instructions, the term “L+30 days” is meant to coincide with the end of the Government Fiscal Year 2005, which ends on 25 September 2005 (also referred to as “end of GFY’05”).

3.0 PACKAGING AND SUBMITTING YOUR PROPOSAL

3.1 Organization and Format

- 3.1.1 Your proposal, which should be organized as closely as practicable to the format and sequence indicated in these proposal instructions, must be submitted as outlined below. Please note that JPL has assigned a mandatory page limitation to the individual proposal volumes. Technical/Management and cost information **MUST** be submitted within their respective volumes. Any information not pertaining to a particular volume will be excluded from evaluation (e.g., management information included in the cost volume will not be evaluated).

<u>Volume No./Title</u>	<u>Page Limit</u>	<u>Number of Copies</u>
VOLUME 1-Technical/Management	120	25
VOLUME 2-Mandatory Qualification Criterion	No limit	8
VOLUME 3-Past Performance	1/contract	8
VOLUMES 4, 5, 6 - Cost	No limit	8

Note: Sequentially number each copy of each proposal volume set

- 3.1.2 For the purpose of the mandatory page limitation, the following rules apply:

- 3.1.2.1 All text must be typed on 8 1/2” x 11” paper.
- 3.1.2.2 Drawings will be considered as part of the page count. Fold-out drawings will be counted proportionally as additional pages (e.g., 11” x 17” will be counted as two pages, etc.).
- 3.1.2.3 A minimum of single spacing is required. Page margins shall be no less than 1/2” at the top, bottom and sides.
- 3.1.2.4 Type font size shall be no smaller than 10 point character height.
- 3.1.2.5 A page is defined as each face of a piece of paper containing substantive evaluable information. Any pages, which exceed the

above noted limitations, will be removed from the proposal and will not be evaluated. Schedules are excluded from the page count limitation.

3.1.2.6 References to World Wide Web sites within the proposal or electronic media as part of the proposal package are not permitted. [Exception: provision (on diskette) of the cost proposal information requested in the "PROPOSAL PRICING" sections of the Cost Instructions is required.]

3.1.3 Unnecessarily elaborate brochures or presentation layouts, other than those sufficient to present a complete and effective proposal, are not desired. Except when specifically requested, mockups, models, samples, hardware, or software of any kind must not be furnished and will not be considered.

3.1.4 Within each volume of your proposal, the authors of each major portion must be identified, and their present organizational position and company affiliation stated.

3.2 Address and Identification

To help ensure timely receipt and processing of your proposal, please download and affix the yellow address label (Attachment 1 to the RFP cover letter) to the envelope/container containing the complete original copy of your proposal. (NOTE: The yellow label is JPL's notification that the package you send is a proposal.). All proposal envelopes/containers must be identified with the RFP number that appears on the RFP cover page.

Hand-carried proposals must be delivered to the California Institute of Technology/Jet Propulsion Laboratory (JPL) Visitor Control Center, at 4800 Oak Grove Drive, Pasadena, Building 249, where it will be received and time-stamped. Visitor Control is open to receive proposals only on working weekdays, between 7:30 a.m. and 4:30 p.m. (proposals are due at the time and date stated on the cover of this RFP).

3.4 Other Proposal Transmission

Proposals will not be accepted by facsimile (fax) transmission or by electronic mail (e-mail).

4.0 DEFINITIONS

Definitions for commonly used terms within this RFP are provided within the Specimen Contract, Exhibit I, Section 1.4, Definitions.

5.0 GENERAL INFORMATION

5.1 Proposal Preparation and Related Costs.

This RFP does not commit JPL or the Government of the United States to pay any costs incurred in submitting your proposal, making studies or designs for preparing the proposal or in procuring or subcontracting for services or supplies related to the proposal.

5.2 The material furnished with this RFP should not be returned to JPL.

5.3 JPL reserves the right to retain all proposal information submitted in response to this RFP.

5.4 Data.

If the proposal contains data that either you or your subcontractors do not wish to be disclosed for any purpose other than proposal evaluation, you must mark the cover sheet of each volume containing such information with the legend below:

“Data contained in pages _____ of this proposal furnished in connection with RFP No. MRO-2005 shall not be used or disclosed, except for evaluation purposes, provided that if a contract is awarded to this offeror as a result of or in connection with the submission of this proposal, JPL and the Government shall have the right to use or disclose this data to the extent provided in the contract. This restriction does not limit JPL’s right to use or disclose any data obtained from another source without restriction.”

5.5 Security

No classified information will be accepted by JPL in response to this RFP.

5.6 Requests for Clarification/RFP Addenda

During the proposal preparation period, all requests for clarification and/or additional information, must be submitted in writing (via email or letter) to the individual referenced by “Attention:” on the cover page of this RFP. When appropriate, responses to requests will be provided to all prospective proposers on the website (<http://acquisition.jpl.nasa.gov/rfp/mro05>) as addenda to the RFP. In addition, any JPL-initiated changes to the governing documents in the RFP package will be provided to all prospective proposers as addenda to the RFP. Prospective proposers will be notified of the issuance of all addenda and the addenda content will be posted on the Web Site. JPL will not be responsible for explanations or interpretations of the RFP by any other means.

NOTE: You must include reference to all addenda on your Acknowledgment to this RFP [Attachment A-1].

5.7 Per the terms of the Specimen Contract, JPL shall have full access to all hardware documentation and software documentation/code developed, inherited or used during the course of this contract. Contractors are cautioned to specifically identify any exceptions in their proposals to avoid any access conflicts during the course of the contract.

5.8 JPL’s policy regarding the use of Contractor’s documentation systems and processes is as follows:

JPL intends to use, to the maximum extent practicable, Contractor documentation systems and/or processes that are equivalent to or meet the intent of JPL requirements.

5.9 JPL has included, as a potential Government Furnished Property item in the Specimen Contract, Exhibit V, Traveling Wave Tube Amplifiers (TWTAs). JPL’s reference design assumes that the TWTAs will be furnished by JPL. If the Contractor elects to furnish this item, the Contractor’s probable cost will be adjusted. The HCD ASIC is considered to be a zero-cost item; therefore, no probable cost adjustments will be made regarding use of the HCD ASIC.

5.10 The Contractor has limited freedom to adjust the ATLO start and KSC shipment dates (and associated reviews) in the proposal if this reduces the overall program cost and/or risk. Justification for any proposed changes must be provided as part of the submitted Phase C/D Implementation Plan.

6.0 LATE PROPOSALS

Any proposal, portion of a proposal, or unrequested proposal revision received at JPL after the time and date specified on the cover page of this RFP is late. Any volume (or portion of a volume) of a proposal received after the time and date specified will cause the entire proposal to be late. Late proposals will not be considered for award, except under the following circumstances:

- 6.1 JPL determines that the late receipt was due solely to a delay by the U.S. postal service for which the offeror was not responsible. Timely postmark or receipt of registered, certified, or express mail "next-day service," establishing the time of deposit must be evidenced.
- 6.2 JPL determines that the proposal was late due solely to mishandling by JPL after receipt at JPL, provided that the timely receipt at JPL is evidenced.

7.0 EARLY SUBMITTAL OF VOLUME 3

JPL requests you to submit Volume 3, Past Performance by May 7, 2001, but no later than June 13, 2001. To facilitate proposal evaluation, clearly mark the outside of the package as follows:

VOLUME 3, PAST PERFORMANCE
RFP No. MRO-2005

8.0 MANDATORY QUALIFICATION CRITERION

- 8.1 JPL has determined that a proposer must possess one of the following "mandatory" qualifications in order to be considered a qualified source and thereby eligible for award:

The proposer must show evidence of (as a prime contractor) participation in or completion of a deep space system development contract within the past five (5) years or show evidence of successfully developing a spacecraft that supports a large optical system within the past five (5) years.

For the purposes of this criterion, a "deep space system" is defined as any spacecraft plus payload which operates outside of Earth orbit (LEO, MEO or GEO).

- 8.2 The proposer shall provide, under a separate section within its Past Performance Volume, a discussion demonstrating that the proposer meets (or will meet at the time of award) the mandatory qualification criteria set forth above. JPL may, at its discretion, conduct limited discussions with proposers for the purpose of clarifying whether they have met the mandatory qualification criteria. The contract listed here will be one of the ones listed in Volume 3, Past Performance.

9.0 CONTRACT OPTIONS

Proposers are cautioned that the proposed cost for the Phase C/D and Phase E options, the credibility of the proposed cost for these options and the technical/management proposal for these options will be considerations in source selection. The criteria and factors for technical evaluation will be in accordance with paragraph 11 of these instructions.

The Specimen Contract provides the priced options for JPL to exercise the full-scale development of the MRO for Phase C/D and Phase E with the selected Contractor. It is JPL's intent to execute the Phase C/D Option prior to the completion of Phase A/B provided that: (a) the Government approves and releases funds for full-scale development; and (2) the Contractor's Phase A/B design study demonstrates the technical and programmatic capability to execute the MRO within program constraints and (3) the delta cost proposal for Phase C/D is within cost constraints and reasonable.

Additionally, the Specimen Contract includes unpriced options for design, fabrication, test and delivery of orbiters or cruise stages for launch opportunities in 2007, 2009 and 2011. However, funding has not been approved nor are details of the missions sufficiently defined to allow a credible cost estimate at this time. The unpriced options for future launches will not be evaluated.

10.0 SOURCE EVALUATION AND SELECTION PROCESS

10.1 Source Evaluation

Responsibility (i.e., consideration of matters such as contractor financial capability, past performance record, adequacy of facilities) is assessed within the meaning of Federal Acquisition Regulation 9.1. Award will not be made to a Contractor deemed to be nonresponsible.

Proposals will be evaluated in the areas of technical and management as described in paragraph 11 below. Although cost will not be scored, cost is a substantial factor and is of approximately equal importance to the combined technical and management areas. JPL plans to make source selection based on the proposer whose proposal is determined to represent the best value to JPL. JPL's best value is defined as the balanced relationship between Technical/Management and fee approaches and cost. If all offers, in the competitive range, are of approximately equal qualitative (technical/management) merit, JPL will select for negotiations the offer with the lowest cost. However JPL may select for negotiations a contractor whose proposal offers a higher qualitative merit if the difference in cost is commensurate with added value. Conversely, JPL may select for negotiations a contractor whose proposal offers a lower qualitative merit if the cost differential between it and other offers so warrants. For purposes of this evaluation, JPL may use the proposed costs or the JPL-determined probable costs, as defined in paragraph 10.1.5 below. JPL will evaluate the proposals utilizing the following process:

- 10.1.1 Before issuing the RFP, JPL establishes specific criteria and their weighting for the evaluation of the Technical/Management proposals. After receipt at JPL, the proposals are evaluated against the pre-set criteria outlined in paragraph 11 below.
- 10.1.2 An analysis of the supporting cost details is performed and the proposed costs are compared. If the Buy American Act, the Balance of Payments Program or rent free use of Government-furnished property applies, costs will be adjusted as required for the purpose of evaluation.
- 10.1.3 Results of the initial proposal evaluation are used to determine which proposals are within the competitive range (i.e., those having a reasonable chance of being selected for award). Proposals determined not to be within the competitive range are eliminated from further consideration, and the proposers are notified accordingly.

JPL may, at its discretion, conduct limited communications with one or more proposer(s) for the purpose of determining whether the proposer(s) should be included in the competitive range. Such precompetitive range communications may be conducted to enhance JPL understanding of proposal(s) and may be used to:

- 10.1.4.1 Validate the proposed price; and
- 10.1.4.2 Clarify omissions, ambiguities and uncertainties in the proposer's supplemental business/cost information; and
- 10.1.4.3 Clarify relevant past performance information.

JPL reserves the right to make a competitive range determination without conducting such communications. Further, JPL, at its discretion, may waive minor informalities and minor irregularities in proposals received.

10.1.4 JPL may make source selection after the initial proposal evaluation or may conduct discussions with the proposers determined be within the competitive range. The purpose of the discussions is to assist the evaluators in fully understanding each proposal by:

10.1.5.1 Discussing those aspects of each proposal which contain omissions, ambiguities and uncertainties;

10.1.5.2. Verifying and identifying strengths and weaknesses which could affect work performance;

10.1.5.3. Verifying the validity of the proposed cost; and

10.1.5.4 Assessing the proposed personnel and the proposer's capabilities for performing the work.

10.1.5 After discussions, the initial evaluation findings are reviewed and may be revised to incorporate the results of the discussions to arrive at a final evaluation. This final evaluation includes completing a thorough assessment of the cost realism of each cost estimate and comparing the cost estimates. In performing this assessment, JPL may develop a "probable cost" for each proposer. "Probable cost" is defined as JPL's best estimate of the cost of any contract that is most likely to result from the offeror's proposal. (Note: JPL will not request or accept best and final offers (BAFOs).)

10.2 Selection Process

The results of the final evaluation are submitted to the JPL Source Selection Official, who selects the Contractor(s) for negotiation.

10.3 JPL reserves the right to reject all proposals, to award a contract based on initial proposals (without proposal clarifications) or conduct oral discussions prior to making source selection.

11.0 TECHNICAL/MANAGEMENT EVALUATION CRITERIA

11.1 Orbiter Capabilities and Conceptual Design – Criterion T1 – (400 points)

The degree to which the proposed Orbiter capabilities and conceptual design satisfy the requirements of the Specimen Contract.

Factors to be considered are:

11.1.1 Orbiter Capabilities and Conceptual Design

11.1.2 Resource and Performance Margins

11.1.3 Heritage

11.2 Orbiter Integration, Test, Launch and Operations – Criterion T2 – (300 points)

The degree to which the proposed Orbiter integration, test, launch and operations approaches result in a qualified and operable Orbiter that is capable of achieving the requirements of the Specimen Contract.

Factors to be considered are:

- 11.2.1 Orbiter Design Verification and Validation
- 11.2.2 Software Design Verification, Integration and Test
- 11.2.3 Sparing Philosophy
- 11.2.4 Orbiter Integration and Test
- 11.2.5 Payload Integration and Test
- 11.2.6 Launch Site Operations
- 11.2.7 Mission Operations

11.3 Implementation Plans and Management Approach – Criterion 3 (300 points)

The degree to which the Phase A/B, Phase C/D and Phase E implementation plans and Management Approach meet the requirements of the Specimen Contract.

Factors to be considered are:

- 11.3.1 Phase A/B Implementation Plan
- 11.3.2 Phase C/D Implementation Plan
- 11.3.3 Mission Operations Planning, including Phase E Implementation Plan
- 11.3.4 Mission Assurance and Risk Management
- 11.3.5 Small/Small Disadvantaged Business Plan
- 11.3.6 Compliance with JPL Design Principles
- 11.3.7 Related Experience

12.0 EXCEPTIONS TO TERMS AND CONDITIONS

A large number of exceptions or one or more significant exceptions to the General Provisions and/or Additional General Provisions may make your proposal unacceptable for evaluation. You must provide a detailed explanation, including the rationale, for any exceptions you take. Proposers who submit proposals with exceptions may be selected for negotiations; however, if an agreement cannot be negotiated, your proposal may be rejected.

VOLUME 1 – TECHNICAL/MANAGEMENT INSTRUCTIONS

1.0 INTRODUCTION

This portion of the proposal instructions sets forth the requirements to be followed in preparing the Technical/Management Proposal. The following specific information must be included to permit an evaluation of your technical and management capabilities:

2.0 Volume 1 – Technical/Management Proposal

2.1 Part A – Orbiter Capabilities and Conceptual Design, Criterion T1

Describe the capabilities and conceptual design of your proposed Orbiter including, but not limited to the following:

2.1.1 Orbiter Capabilities and Conceptual Design

2.1.1.1 Describe the Orbiter system-level design and interfaces. Provide separate tables that detail and summarize key system performance parameters (including mass and power). Discuss any aspects of your design which do not comply with Exhibit I requirements including your rationale for any non-compliance. Provide a list of key remaining trade studies to be accomplished during the contract.

2.1.1.2 Describe the capability of your design to accommodate mass and power budget growth.

2.1.1.3 Describe your proposed hardware and software subsystem designs and how you arrived at those designs. Include appropriate narrative, block diagrams and figures to allow an understanding of subsystem functions, interfaces, and fault protection.

2.1.1.4 Describe the capability of your design to accommodate changes in or substitution of payloads or launch vehicles.

2.1.1.5 Describe how your design implements aerobraking and how this affects the system design.

2.1.1.6 Provide a description of how your design meets the pointing requirements from Exhibit I and what assumptions/constraints were used in your pointing accuracy and stability analysis.

2.1.1.7 Describe how operability was factored into your design.

2.1.1.8 Describe the reliability/lifetime aspects of your design and how you assess these. Identify which elements of your design pose the most risk to Orbiter reliability/lifetime and discuss your plan to mitigate those risks.

2.1.2 Resource Margins and Performance

2.1.2.1 Describe your proposed resource margins. Identify how the margins were derived, how they are allocated at both system and subsystem levels and provide a description of any liens against these margins. Provide power allocations (by subsystem/payload item for each of the primary mission modes) vs. Orbiter capability.

- 2.1.2.2 Describe the capability of your design vs. performance requirements in Exhibit I and provide performance budgets for each requirement.

2.1.3 Heritage

Identify the heritage of the hardware, software and GSE you propose to use, including your assessment of the applicability of the heritage to MRO, the degree of modifications required, the developmental readiness/availability, risk and the rationale for use. Provide a matrix listing all proposed hardware, software and GSE with previous heritage.

2.2 Part B – Orbiter Integration, Test, Launch and Operations, Criterion T2

Provide your plan for Orbiter integration, test, launch and operations as follows:

2.2.1 Orbiter Design Verification and Validation

Describe your overall approach to verification and validation of the Orbiter design. Include your proposed use of testbeds, software/hardware simulations and mission operations components. Describe your approach to verifying mission sequences, fault tolerance functionality and autonomous operations. Provide a detailed verification matrix listing your planned verification approach for each of the requirements contained in Exhibit I.

2.2.2 Software Design Verification, Integration and Test

Describe your approach for flight software design verification and how your software integration and test plans correlate with Orbiter/payload integration and test activities. Describe how this process has been used on other programs.

2.2.3 Sparing Philosophy

Describe your approach to sparing of Orbiter hardware and critical GSE. Include a summary table listing all proposed spares and/or repair items.

2.2.4 Orbiter Integration and Test

Describe your plan for integrating the Orbiter and validating its capabilities. Discuss your functional, performance and environmental test flow at the subsystem and system levels. Discuss your approach for risk mitigation during Orbiter integration, test and launch operations.

2.2.5 Payload Integration and Test

Describe your approach for integrating the science and engineering payloads with the Orbiter and verifying interfaces. Identify any special test equipment. Identify any potential risks and your approach to mitigation.

2.2.6 Launch Site Operations

Describe your Orbiter/launch vehicle integration plan and timeline including launch vehicle integration, launch and launch operations (through launch plus 30 days).

2.2.7 Mission Operations

Describe your approach for validating operational sequences during mission operations prior to execution.

2.3 Part C – Implementation Plans and Management Approach, Criterion T3

Provide your plans for implementation and management as follows:

2.3.1 Phase A/B Implementation Plan

Describe your Phase A/B Implementation Plan, including all anticipated tasks needed to complete Orbiter definition and conceptual design.

2.3.1.1 A description of your proposed project organization and a brief description of the qualifications of key people, who will be committed to this project and the extent to which they have contributed to your proposal.

2.3.1.2 A Gantt schedule that contains sufficient detail to illustrate your planned schedule for design definition, preliminary design, long lead procurements, meetings and reviews, and proposal preparation.

2.3.2 Phase C/D Implementation Plan

Describe your Phase C/D Implementation Plan, including tasks for the design, development, launch vehicle integration, launch and support to mission operations through launch plus 30 days (end of GFY'05). Include:

2.3.2.1 A description of the changes to your proposed project organization and key personnel from the Phase A/B Implementation Plan to the Phase C/D Implementation Plan, and a brief description of the qualifications of any new key people who will be committed to this project.

2.3.2.2 A Gantt schedule to at least Level 4, with critical path identified. Describe the phasing of the individual tasks and subtasks as shown in the JPL-provided WBS. Identify your schedule margins at both the system and subsystem level.

2.3.2.3 A description of your proposed facilities, capabilities, locations and availability. Discuss any anticipated or pending facility changes which could affect this contract and your plans for accommodation.

2.3.2.4 A description of your approach to manufacturing (including manufacturing flow charts, as necessary, for clarity). Include a table and appropriate discussion of what you plan to make vs. buy and how you arrived at your make vs. buy decisions. Describe your supplier relationships, including requirements flowdown and the means of data exchange employed.

2.3.2.5 A description of your software development approach.

2.3.2.6 A description of your internal reporting and control processes for workforce, budgets, earned value, schedules and costs.

2.3.3 Mission Operations Planning, including Phase E implementation

Describe your mission operations planning process, including the Phase E Implementation Plan, for supporting JPL during mission operations, including your approach to analyzing flight system in-flight performance, assessing Orbiter health and providing support to the uplinking, sequencing and navigation processes, per the requirements of Exhibit IV. Describe your approach for providing/reporting this information to JPL.

2.3.4 Mission Assurance and Risk Management

A description of your proposed mission assurance (MA) approach (e.g., Quality Assurance (H/W and S/W), Reliability Engineering, Environmental Assurance, Electronic Parts, Radiation Effects, Configuration Management and Materials and Processes (M&P)). Identify any non-compliances with JPL D-20327. Note: After you have submitted your proposal, a Safety and Mission Assurance (SMA) survey team will visit your facility, for one day, for the purposes of evaluating your existing SMA program implementation. This SMA survey will be coordinated and scheduled with you sometime after the submission of your proposal.

A description of your approach to risk management. Provide a list of risk items with a preliminary assessment of development risk for MRO, your proposed mitigations and your description of the specific risk management strategies that you anticipate using during this development. A description of how your management processes allow for access to, involvement with and input from “line” expertise.

2.3.5 Small/Small Disadvantaged Business Plan

Describe the opportunities offered by the mission for participation by small businesses, small disadvantaged businesses, women-owned small business, HUBZONE small business, historically black colleges and minority universities. Identify and support the percentage of work, expressed as a percentage of total subcontracted dollars and total contract dollars, to be performed by small businesses and small disadvantaged businesses.

2.3.6 Compliance with JPL Design Principles

Discuss any non-compliances with JPL D-17868, listed in Exhibit II (except in those areas specifically excluded by JPL D-20454), and provide your rationale for those non-compliances.

2.3.7 Related Experience

Discuss at least three programs of similar technical complexity within the last five years, or currently in process, that illustrate related experience in cost, design, fabrication, system/payload integration and test, and documentation of space flight qualified hardware, software and support equipment similar to the effort being proposed. For each program discussed, identify similarities and differences between the programs described and the proposed effort.

VOLUME 2 – MANDATORY QUALIFICATION CRITERION

Provide as a separate volume, a discussion demonstrating that the proposer meets (or will meet at the time of award) the mandatory qualification criterion set forth in General Instructions, paragraph 8.0.

VOLUME 3 – PAST PERFORMANCE

1.0 Introduction

This portion of the proposal instructions sets forth the requirements to be followed in preparing Volume 3 – PAST PERFORMANCE. The information contained in this volume will be used by JPL to assess past performance in technical, schedule, administrative and cost/price areas for contracts similar to the MRO effort.

2.0 Past Performance

Provide a synopsis of all similar contracts performed within the past five (5) years by the cognizant organization proposed for this effort. Include similar on-going efforts.

This RFP contains an evaluation factor entitled “Related Experience.” Please include a synopsis of ALL the efforts you listed in response to that factor. See volume I, section 2.3.7, General Instructions.

These synopses are to include the following customer contact and contract information:

- Contract number;
- Customer name and current address;
- Current cognizant contract administrator and technical contact;;
- Period of performance;
- Contract type;
- Average number of personnel assigned to contract effort; and
- Initial and final cost or price
- Initial and final schedule

PAGE LIMITATION – ONE (1) PAGE PER CONTRACT DISCUSSED

VOLUME 3- COST INSTRUCTIONS-PHASE A/B

Your three (3) cost proposals (each submitted in a separate volume) added together will equal your total cost to complete the effort. The phases are: Phase A/B (ending on approximately 9/1/02), Phase C/D (ending on approximately 9/25/05) and Phase E (ending on approximately 12/26/10).

For proposal purposes only, assume the period of performance for Phase A/B effort to commence August 31, 2001 and end September 1, 2002. Note: Your proposed cost for Phase A/B is not to include any costs associated with initiating long-lead Phase C/D procurements during the Phase A/B period of performance.

1.0 DATA SUBMITTAL

- 1.1 Submit a Contract Pricing Proposal Cover Sheet, signed by the proposer's authorized representative, stating:
 - 1.1.1 The solicitation number, proposed cost, profit or fee, and total;
 - 1.1.2 Whether your organization is subject to cost accounting standards (CAS);
 - 1.1.3 Whether your organization has submitted a CASB Disclosure Statement, and if it has been determined adequate;
 - 1.1.4 Whether you have been notified that you are or may be in noncompliance with your Disclosure Statement or CAS, and, if yes, an explanation;
 - 1.1.5 Whether any aspect of this proposal is inconsistent with your disclosed practices or applicable CAS, and, if so, an explanation; and
 - 1.1.6 Whether the proposal is consistent with your established estimating and accounting principles and procedures and FAR Part 31, "Cost Principles," and, if not, an explanation.
- 1.2 A letter authorizing the DCAA to release rate and other relevant information concerning your company to the Jet Propulsion Laboratory.

2.0 PHASE A/B FUNDING PROFILE

The following funding is available for all costs and fees associated with your proposed cost for Phase A/B. Be advised that any JPL authorization to initiate long-lead Phase C/D procurements during the Phase A/B period of performance must be accompanied by funding over and above the amounts listed below.

Phase A/B

GFY'01	GFY'02
\$1.5 M	\$10.0 M

GFY – Government Fiscal Year, October through (the last Sunday of) September

3.0 PROPOSAL PRICING

3.1 Submit a cost estimate by element of cost and time-phased by month for each lowest level item in your expanded WBS described under item 3.3. below. Your Phase A/B expanded WBS should be identical to your Phase C/D expanded WBS, regardless of whether the estimated cost for a particular item is negligible or zero for Phase A/B. In addition, provide summaries of these estimates (by element of cost and time phased by month) at each successively higher level of the WBS, and for the total Phase A/B contract effort. While Proposed Labor should be costed by labor grade and work hour, the time phasing should identify both work hours and headcount by month. This information should be submitted using Attachment A-15, "Cost Elements Breakdown," or your computer-generated equivalent. Include a copy of the data on a 3.5-inch computer diskette in an Excel-compatible format (consistent with JPL D-20454).

3.2 For the purposes of this proposal, the Contractor should assume the following regarding the resources allocated to supporting external review and meetings (e.g., project PDR at JPL):

Assume that 3,000 work hours of document preparation and six (6) trips to JPL, each of three (3) days duration, for seven (7) travelers will cover the workforce and travel costs associated with supporting the reviews/meetings specified within the Statement of Work (SOW), paragraphs 1.6.7.1, 1.6.7.2 and 1.6.7.4.

For the quarterly reviews specified in the SOW, paragraph 1.6.7.3, assume three (3) people traveling to JPL for meetings of two (2) days duration on a quarterly basis.

3.3 For the purposes of integrating your work effort into the JPL Project WBS, the following WBS levels and definitions are specified:

WBS Level	Description	Numbering	Example
1	JPL Project		
2	System	xx.	05 Orbiter Development
3	Major Function or Subsystem	xx.xx	05.07 Flight Software
4	Task	xx.xx.xx	05.10.02 Orbiter Testbed
5	Subtask	xx.xx.xx.xx	

The following WBS items and numbering are specified for the preparation of your Phase A/B proposal (as applicable):

- 05 Orbiter Development
 - 05.01 Management
 - 05.01.01 External Reviews
 - 05.02 System Engineering
 - 05.02.01 Payload Accommodation Engineering
 - 05.03 Mission Assurance and PMP
 - 05.03.01 Software IV&V
 - 05.04 Avionics (includes C&DH, Power)
 - 05.04.01 20 MIPS Payload Processing Capability
 - 05.05 Telecommunications Subsystem
 - 05.06 Mechanical/Thermal (includes mechanisms and harnesses)
 - 05.07 Flight Software
 - 05.08 Propulsion Subsystem
 - 05.09 Guidance, Navigation and Control
 - 05.10 Assembly, Test and Launch Operations (ATLO)
 - 05.10.01 ATLO Engineering

- 05.10.02 Orbiter Test Bed
- 05.10.03 Ground Support Equipment
- 05.10.04 Orbiter Integration and Test
- 05.10.05 Payload Integration
- 05.10.06 Launch Operations (to Launch + 30 days)
- 05.11 Special Studies
- 06 MOS/GDS Development
 - 06.01 MOS/GDS Development Management
 - 06.02 MOS/GDS Development System Engineering
 - 06.03 Mission Operations System Development
 - 06.04 Ground Data System Development

Prepare a Work Breakdown Structure, expanded to at least one level below the specific WBS Items listed directly above for the Phase A/B proposal (as appropriate) At a minimum, your expanded WBS must include each of the above provided specific Items.. Present the WBS in both tabular and graphic form. Provide a WBS Dictionary and Basis-of-Estimate (BOE) explanations to this expanded level. The WBS Dictionary shall clearly define the scope of each element of the expanded WBS, and shall describe the work to be performed and the major deliverables involved. Within your BOE explanations, identify Contractor-provided capital equipment (if any).

- 3.4 Provide a recommended JPL budget reserve amount, time-phased by GFY, for each JPL-supplied WBS element that you have bid, based upon your assessment of that element's development risk and cost estimate uncertainty risk.

4.0 COST ELEMENTS SUPPORTING DATA

The following information is required in support of your estimated cost.

4.1 Direct Labor

- 4.1.1 Explain the basis of the labor-hour estimate, by classification, separately for each lowest-level WBS item proposed. Show all calculations in detail including the development of any factored hours and the base to which the factor is applied.
- 4.1.2 Discuss the development of the labor rates including all escalation factors. Include a summary rate table by classification and lowest fiscal distribution (i.e., by quarter if rates change quarterly). If available, submit evidence of Government approval of direct labor rates for each labor classification.
- 4.1.3 Failure to provide detailed rate information will deem you non-responsive.

4.2 Material

Submit a breakdown of raw materials and purchased parts including: basis of estimates, part number, description, quantity, unit price, extended price, and source of supply. Describe any pricing factors proposed such as scrap, rework, and usage.

4.3 Subcontracts

Identify each effort to be subcontracted. Provide a list of all subcontracts and include the selected subcontractor's name, location, period of performance, amount proposed and type of contract. Explain any adjustment made to the subcontractor's proposed costs. Describe the cost or price estimates for each subcontract.

4.4 Other Direct Costs

4.4.1 Travel and Relocation

4.4.1.1 Indicate the destination, duration and purpose of each trip proposed. Detail the development of each cost element included in the per trip cost.

4.4.1.2 Submit current company policy regarding the reimbursement of travel relocation costs and the accounting of such costs as a direct or indirect expense.

4.4.2 Special Tooling and Special Test Equipment

4.4.2.1 Special Tooling and Special Test Equipment are defined in the JPL form entitled "Management of Government Property in the Possession of Contractors," which is incorporated into the Specimen Contract. Describe each item of Special Tooling and Special Test Equipment you proposed; explain how it meets the definition referenced above; indicate where and when each item is to be used and the extent of usage.

4.4.2.2 Explain the Basis of Estimate and furnish supporting data for each item of Special Tooling and Special Test Equipment in accordance with the requirements of the paragraphs entitled "Direct Labor," "Material" and "Subcontracts" above.

4.4.3 Computer Usage

Describe the proposed computer usage, extent of usage, rate(s), and the total cost. Explain the development of the rate(s).

4.4.4 Consultants

Indicate the specific task requiring consultant services. Identify the proposed consultants, state the proposed hourly/daily rate, the estimated number of hours/days, and any associated costs (such as travel). State whether the consultant has been compensated at the quoted rate for similar services performed in connection with Government contracts.

4.4.5 Licensing and Royalty Information

If your proposal contains costs for royalties or licenses, indicate the amount and be prepared to furnish details.

4.4.6 Other

Explain and support any additional other direct costs included in the proposal.

4.5 Indirect Costs.

4.5.1 Discuss the development of each proposed indirect expense rate (e.g., labor overhead, material overhead, off-site burden, general and administrative (G&A)). Specifically identify the cost elements included in the base to which each rate is applied. List the indirect expense rates experienced for the past two years. Explain any significant variance between the experienced and proposed rates. Submit evidence of Government approval of each indirect rate if available.

4.5.2 Identify separately any independent research and development expenses included in the G&A rate.

4.5.3 Failure to provide detailed rate information will deem you nonresponsive.

5.0 LETTER CONTRACT OR SMALL START-UP CONTRACT

Schedule demands may require the issuance of a Letter Contract or small start-up contract. To facilitate the issuance of such, those contractors determined to be in the competitive range may be required to provide the following:

- 5.1 The estimated cost for the period from August 31, 2001 through February 28, 2002 of each lowest level WBS item scheduled to be initiated in the first six (6) months of the contract. These estimated costs should be presented either as a stand-alone subproposal or as a specifically identified portion of the Phase A/B proposal.

6.0 MONTHLY FUNDING PROFILE

Provide a profile of the funding you will require, by month, for all costs and fees you have proposed for Phase A/B.

7.0 SUPPLEMENTAL BUSINESS/COST INFORMATION

7.1 Financial Statement.

Submit a copy of your annual financial statements for the last three years and any information regarding additional resources required to perform the proposed effort, such as an established line of credit or other financial resource. If this information has recently been submitted to JPL, re-submittal is not necessary; simply reference the applicable JPL RFP number under which the data was submitted.

7.2 Accounting Calendar.

The proposer will furnish its accounting calendar for each year in which work is anticipated.

7.3 Business Base:

Provide a description of your anticipated business base through 2006 for the business units involved in this development. Discuss any uncertainties or anticipated significant changes to the business base for these business units and its anticipated effect on your ability to provide resources to meet MRO project commitments. Discuss the anticipated effects of these uncertainties or changes on your rate structure and describe how this was factored into your Cost Proposal.

7.4 Attachments

The Section of this RFP entitled "Attachments" consists of those forms and documents containing information applicable to this RFP. Group A Attachments must be completed and attached to your cost proposal. Group B Attachments consist of forms and documents for informational purposes only and can be accessed via the electronic address provided below. Hard copies of the Group B Attachments will be mailed by request only. Note that the Group B Attachments are very important and may be required under the Contract.

World Wide Web: <http://acquisition.jpl.nasa.gov/e2000.htm>

Attachment	Title and Form Number
A-1 (Phase A-E)	Acknowledgment (form JPL 2384)
A-2 (Phase A-E)	Cost Accounting Standards (form JPL 2842)
A-3 (Phase A-E)	Government Property Questionnaire (form 0544)
A-15 (Phase A/B)	Cost Elements Breakdown (form 0549)
B-1 (Phase A-E)	Waiver of Rights to Invention (form JPL 62-301)
B-5 (Phase A-E)	Notice of Requirement of Pre-award On Site Equal Opportunity Compliance Review (form JPL 3553)
B-6 (Phase A-E)	Requirement for Subcontracting Plans (form JPL 0294)
B-14 (Phase A-E)	Form Letter: Billing Instructions – Cost-Type Contract (form JPL 2716)
B-17 (Phase A-E)	JPL Contractor Safety and Health Notification (form JPL 2885)

8.0 FEE STRUCTURE FOR PHASE A/B

Phase A/B shall be Cost-Plus-Fixed-Fee.

VOLUME 5- COST INSTRUCTIONS-PHASE C/D

For proposal purposes only, assume the period of performance for Phase C/D effort to commence September 1, 2002 and end September 25, 2005 (end of GFY'05). Note: Your proposed cost for Phase C/D must also include all costs associated with initiating long-lead Phase C/D procurements during the Phase A/B period of performance.

1.0 DATA SUBMITTAL

- 1.1 Submit a Contract Pricing Proposal Cover Sheet, signed by the proposer's authorized representative, stating:
 - 1.1.1 The solicitation number, proposed cost, profit or fee and total;
 - 1.1.2 Whether your organization is subject to Cost Accounting Standards (CAS);
 - 1.1.3 Whether your organization has submitted a CASB Disclosure Statement and, if it has been determined adequate;
 - 1.1.4 Whether you have been notified that you are or may be in noncompliance with your Disclosure Statement or CAS and, if yes, an explanation;
 - 1.1.5 Whether any aspect of this proposal is inconsistent with your disclosed practices or applicable CAS and, if so, an explanation; and
 - 1.1.6 Whether the proposal is consistent with your established estimating and accounting principles and procedures and FAR Part 31, "Cost Principles," and, if not, an explanation.

2.0 PHASE C/D FUNDING PROFILE

The following funding profile is available for all costs and fees associated with your proposed total cost for Phase C/D, including long-lead Phase C/D procurements during Phase A/B. Cost for these long-lead procurements will be applied to the GFY'02 allocation. The funding profile is expressed as a cumulative percentage of the total Phase C/D funding available. The MRO project is a cost-constrained mission with a constrained funding profile. Proposers should generate profiles with funding requirements as late as possible in the development cycle while maintaining appropriate schedule margins and risk posture.

Phase C/D

<u>GFY'02</u>	<u>GFY'03</u>	<u>GFY'04 + '05</u>	
10%	45%	100%	(cumulative total Phase C/D funding available)

GFY – Government Fiscal Year, October through (the last Sunday of) September

3.0 PROPOSAL PRICING

- 3.1 Submit a cost estimate by element of cost and time-phased by month for each lowest level item in your expanded WBS (described under item 3.3. below). Your Phase A/B expanded WBS should be identical to your Phase C/D expanded WBS, regardless of whether the estimated cost for a particular item is negligible or zero for Phase A/B. In addition, provide summaries of these estimates (by element of cost and time-phased by month) at each successively higher level of the WBS, and for the total Phase C/D Contract effort. While proposed Labor should be costed by labor grade and work hour, the time phasing should identify both work hours and headcount by month. This information should be submitted using Attachment A-15, "Cost Elements Breakdown,"

or your computer-generated equivalent. Include a copy of the data on a 3.5-inch computer diskette in an Excel-compatible format (consistent with JPL D-20454).

- 3.2 Assume that 6,000 work hours of document preparation and ten (10) trips to JPL, each of three (3) days duration, for 10 travelers will cover the workforce and travel costs associated with supporting the reviews/meetings specified within the SOW, paragraphs 2.8.8.2, 2.8.8.3, 2.8.8.4, 2.8.8.5, 2.8.8.7, 2.8.8.8, 2.8.8.9 and 2.8.8.10.

For the quarterly reviews specified in the SOW, paragraph 2.8.8.1, assume three (3) people traveling to JPL for meetings of two (2) days duration on a quarterly basis.

- 3.3 For the purpose of integrating your work effort into the JPL WBS the following WBS levels and definitions are specified:

WBS Level	Description	Numbering	Example
1	JPL Project		
2	System	xx.	05 Orbiter Development
3	Major Function or Subsystem	xx.xx	05.07 Flight Software
4	Task	xx.xx.xx	05.10.02 Orbiter Test Bed
5	Sub-task	xx.xx.xx.xx	

WBS Items are specified for the preparation of your Phase C/D proposal (as applicable).

- 05 Orbiter Development
 - 05.01 Management
 - 05.01.01 External Reviews
 - 05.02 System Engineering
 - 05.02.01 Payload Accommodation Engineering
 - 05.03 Mission Assurance & PMP
 - 05.03.01 Software IV&V
 - 05.04 Avionics (includes C& DH, Power)
 - 05.04.01 20 MIPS Payload Processing Capability
 - 05.05 Telecommunications Subsystem
 - 05.06 Mechanical/Thermal (includes mechanisms and harnesses)
 - 05.07 Flight Software
 - 05.08 Propulsion Subsystem
 - 05.09 Guidance, Navigation & Control
 - 05.10 Assembly, Test and Launch Operations (ATLO)
 - 05.10.01 ATLO Engineering
 - 05.10.02 Orbiter Test Bed
 - 05.10.03 Ground Support Equipment
 - 05.10.04 Orbiter Integration and Test
 - 05.10.05 Payload Integration
 - 05.10.06 Launch Operations (to Launch + 30 days)
 - 05.11 Special Studies
- 06 MOS/GDS Development
 - 06.01 MOS/GDS Development Management
 - 06.02 MOS/GDS Development System Engineering
 - 06.03 Mission Operations System Development
 - 06.04 Ground Data System Development

Prepare a Work Breakdown Structure, expanded to at least one level below the specific WBS Items listed directly above for the Phase C/D proposal (as appropriate). At a

minimum, your expanded WBS must include each of the above provided specific Items. Present the WBS in both tabular and graphic form. Provide a WBS Dictionary and Basis-Of-Estimate (BOE) explanations to this expanded level. The WBS Dictionary shall clearly define the scope of each element of the expanded WBS, and shall describe the work to be performed and the major deliverables involved. Within your BOE explanations, identify Contractor-provided capital equipment (if any).

- 3.4 Provide a recommended JPL budget reserve amount, time-phased by GFY, for each JPL-supplied WBS element that you have bid, based upon your assessment of that element's development risk and cost estimate uncertainty risk.

4.0 COST ELEMENTS SUPPORTING DATA

The following information is required in support of your estimated cost.

4.1 Direct Labor

- 4.1.1 Explain the basis of the labor-hour estimate, by classification, separately for each lowest-level WBS item proposed. Show all calculations in detail including the development of any factored hours and the base to which the factor is applied.
- 4.1.2 Discuss the development of the labor rates including all escalation factors. Include a summary rate table by classification and lowest fiscal distribution (i.e., by quarter if rates change quarterly). If available, submit evidence of Government approval of direct labor rates for each labor classification.
- 4.1.3 Failure to provide detailed rate information will deem you non-responsive.

4.2 Material

Submit a breakdown of raw materials and purchased parts including: basis of estimates, part number, description, quantity, unit price, extended price, and source of supply. Describe any pricing factors proposed such as scrap, rework, and usage.

4.3 Subcontracts

Identify each effort to be subcontracted. Provide a list of all subcontracts and include the selected subcontractor's name, location, period of performance, amount proposed and type of contract. Explain any adjustment made to the subcontractor's proposed costs. Describe the cost or price estimates for each subcontract.

4.4 Other Direct Costs

4.4.1 Travel and Relocation

- 4.4.1.1 Indicate the destination, duration and purpose of each trip proposed. Detail the development of each cost element included in the per trip cost.
- 4.4.1.2 Submit current company policy regarding the reimbursement of travel relocation costs and the accounting of such costs as a direct or indirect expense.

4.4.2 Special Tooling and Special Test Equipment

- 4.4.2.1 Special Tooling and Special Test Equipment are defined in the JPL form entitled "Management of Government Property in the Possession of Contractors," which is incorporated into the Specimen Contract. Describe each item of Special Tooling and Special Test Equipment you

proposed; explain how it meets the definition referenced above; indicate where and when each item is to be used and the extent of usage.

4.4.2.2 Explain the Basis of Estimate and furnish supporting data for each item of Special Tooling and Special Test Equipment in accordance with the requirements of the paragraphs entitled “Direct Labor,” “Material” and “Subcontracts” above.

4.4.3 Computer Usage

Describe the proposed computer usage, extent of usage, rate(s), and the total cost. Explain the development of the rate(s).

4.4.4 Consultants

Indicate the specific task requiring consultant services. Identify the proposed consultants, state the proposed hourly/daily rate, the estimated number of hours/days, and any associated costs (such as travel). State whether the consultant has been compensated at the quoted rate for similar services performed in connection with Government contracts.

4.4.5 Licensing and Royalty Information

If your proposal contains costs for royalties or licenses, indicate the amount and be ready to furnish details.

4.4.6 Other

Explain and support any additional other direct costs included in the proposal.

4.5 Indirect Costs

4.5.1 Discuss the development of each proposed indirect expense rate (e.g., labor overhead, material overhead, off-site burden, general and administrative (G&A)). Specifically identify the cost elements included in the base to which each rate is applied. List the indirect expense rates experienced for the past two years. Explain any significant variance between the experienced and proposed rates. Submit evidence of Government approval of each indirect rate if available.

4.5.2 Identify separately any independent research and development expenses included in the G&A rate.

4.5.3 Failure to provide detailed rate information may deem you non-responsive.

5.0 MONTHLY FUNDING PROFILE

Provide a profile of the funding you will require, by month, for all costs and fees you have proposed for Phase C/D. Those funds you identify here as being required during the Phase A/B period of performance to initiate proposed long-lead Phase C/D procurements should be further identified by part type.

6.0 SUPPLEMENTAL BUSINESS/COST INFORMATION

Accounting Calendar.

The proposer will furnish its accounting calendar for each year in which work is anticipated.

7.0 ON-ORBIT PERFORMANCE INCENTIVE FEE

JPL will consider the extent to which your fee approach incentivizes cost control during Phase C/D and the extent to which the proposer is willing to earn all fees based on performance at Mars. JPL desires a fee arrangement that will embody the following principles and features:

- 7.1 A split of the fee between a cost incentive (40%) and an on-orbit incentive (60%). 100% of the cost incentive fee and 100% of the On-Orbit Incentive Fee is subject to on-orbit performance.
- 7.2 A cost deadband with cost sharing provisions.
- 7.3 An On-Orbit Incentive Fee based on meeting specific Exhibit I requirements linked to the percentage of time that the Orbiter is available to return science data (primary factor) and provide relay/navigation services (secondary factor).

Provide a proposed incentive fee contract provision. At a minimum, include the principles featured above. Briefly describe how it will incentivize performance.

8.0 Attachments

The section of this RFP entitled "Attachments" consists of those forms and documents containing information applicable to this RFP. Group A Attachments must be completed and attached to your cost proposal.

Attachment	Title and Form Number
A-15 (Phase C/D)	Cost Elements Breakdown (form 0549)

VOLUME 6- COST INSTRUCTIONS-PHASE E

For proposal purposes only, assume the period of performance for Phase E effort to commence September 26, 2005 and end December 26, 2010.

1.0 DATA SUBMITTAL

- 1.1 Submit a Contract Pricing Proposal Cover Sheet, signed by the proposer's authorized representative, stating:
 - 1.1.1 The solicitation number, proposed cost, profit or fee, and total;
 - 1.1.2 Whether your organization is subject to cost accounting standards (CAS);
 - 1.1.3 Whether your organization has submitted a CASB Disclosure Statement, and if it has been determined adequate;
 - 1.1.4 Whether you have been notified that you are or may be in noncompliance with your Disclosure Statement or CAS, and, if yes, an explanation;
 - 1.1.5 Whether any aspect of this proposal is inconsistent with your disclosed practices or applicable CAS, and, if so, an explanation; and
 - 1.1.6 Whether the proposal is consistent with your established estimating and accounting principles and procedures and FAR Part 31, "Cost Principles," and, if not, an explanation.

2.0 PHASE E FUNDING PROFILE

No funding profile is available for Phase E.

3.0 PROPOSAL PRICING

- 3.1 Submit a cost estimate by element of cost and time-phased by month for each lowest level item in your expanded WBS described under item 3.3 below. Your Phase E expanded WBS should have the same structure as your Phase C/D expanded WBS, except that you may omit items which are inapplicable to Phase E. In addition, provide summaries of these estimates (by element of cost and time-phased by month) at each successively higher level of the WBS, and for the total Phase E Contract effort. While proposed Labor should be costed by labor grade and work hour, the time phasing should identify both work hour and headcount by month. This information should be submitted using Attachment A-15, "Cost Elements Breakdown," or your computer-generated equivalent. Include a copy of the data on a 3.5-inch computer diskette in an Excel-compatible format (consistent with JPL D-20454).
- 3.2 Assume that WBS item 06.05 Anomaly Pool has an estimated cost of \$100K per GFY for each Phase E GFY starting in GFY '06.
- 3.3 For the purposes of this proposal, the Contractor should assume the following regarding the resources allocated to supporting critical event readiness reviews (e.g., MOI):

Assume that 600 work hours of document preparation and three (3) trips to JPL, each of three (3) days duration, for three (3) travelers will cover the workforce and travel costs.
- 3.4 For the purpose of integrating your work effort into the JPL WBS, the following WBS levels and definitions are specified:

WBS Level	Description	Numbering	Example
1	JPL Project		
2	System	xx.	06 MOS/GDS Operations
3	Major Function or Subsystem	xx.xx	06.01 MOS/GDS Operations Mgmt

The following WBS and numbering are specified for the preparation of your Phase E proposal (as applicable).

- 05 Orbiter
 - 05.01 Management
 - 05.01.01 External Reviews
 - 05.02 System Engineering
 - 05.02.01 Payload Accommodation Engineering
 - 05.03 Mission Assurance and PMP
 - 05.03.01 Software IV&V
 - 05.04 Avionics (includes C& DH, Power)
 - 05.04.01 20 MIPS Payload Processing Capability
 - 05.05 Telecommunications Subsystem
 - 05.06 Mechanical/Thermal (includes mechanisms and harnesses)
 - 05.07 Flight Software
 - 05.08 Propulsion Subsystem
 - 05.09 Guidance, Navigation and Control
 - 05.10 Assembly, Test and Launch Operations (ATLO)
 - 05.10.01 ATLO Engineering
 - 05.10.02 Orbiter Test Bed
 - 05.10.03 Ground Support Equipment
 - 05.10.04 Orbiter Integration and Test
 - 05.10.05 Payload Integration
 - 05.10.06 Launch Operations (to Launch + 30 days)
 - 05.11 Special Studies
- 06 MOS/GDS Operations
 - 06.01 MOS/GDS Operations Management
 - 06.02 MOS/GDS Operations System Engineering
 - 06.03 Mission Operations System Operations
 - 06.04 Ground Data System Operations
 - 06.05 Anomaly Pool

Prepare a Work Breakdown Structure, expanded to at least one level below the specific WBS Items listed directly above for the Phase E proposal (as appropriate). Present the WBS in both tabular and graphic form. Provide a WBS Dictionary and Basis-Of-Estimate (BOE) explanations to this expanded level. The WBS Dictionary shall clearly define the scope of each element of the expanded WBS, and shall describe the work to be performed and the major deliverables involved. Within your BOE explanations, identify Contractor-provided capital equipment (if any).

- 3.3 Provide a recommended JPL budget reserve amount, time-phased by GFY, for each JPL-supplied WBS element that you have bid, based upon your assessment of that element's development risk and cost estimate uncertainty risk.

4.0 COST ELEMENTS SUPPORTING DATA

The following information is required in support of your estimated cost.

4.1 Direct Labor.

- 4.1.1 Explain the basis of the labor-hour estimate, by classification, separately for each lowest level WBS Item proposed. Show all calculations in detail including the development of any factored hours and the base to which the factor is applied.
- 4.1.2 Discuss the development of the labor rates including all escalation factors. Include a summary rate table by classification and lowest fiscal distribution (i.e., by quarter if rates change quarterly). If available, submit evidence of Government approval of direct labor rates for each labor classification.
- 4.1.3 Failure to provide detailed rate information will deem you non-responsive.

4.2 Material

Submit a breakdown of raw materials and purchased parts including: basis of estimates, part number, description, quantity, unit price, extended price, and source of supply. Describe any pricing factors proposed such as scrap, rework, and usage.

4.3 Subcontracts.

Identify each effort to be subcontracted. Provide a list of all subcontracts and include the selected subcontractor's name, location, period of performance, amount proposed and type of contract. Explain any adjustment made to the subcontractor's proposed costs. Describe the cost or price estimates for each subcontract.

4.4 Other Direct Costs.

4.4.1 Travel and Relocation.

- 4.4.1.1 Indicate the destination, duration and purpose of each trip proposed. Detail the development of each cost element included in the per trip cost.
- 4.4.1.2 Submit current company policy regarding the reimbursement of travel relocation costs and the accounting of such costs as a direct or indirect expense.

4.4.2 Special Tooling and Special Test Equipment.

- 4.4.2.1 Special Tooling and Special Test Equipment are defined in the JPL form entitled "Management of Government Property in the Possession of Contractors," which is incorporated into the Specimen Contract. Describe each item of Special Tooling and Special Test Equipment you proposed; explain how it meets the definition referenced above; indicate where and when each item is to be used and the extent of usage.
- 4.4.2.2 Explain the Basis of Estimate and furnish supporting data for each item of Special Tooling and Special Test Equipment in accordance with the requirements of the paragraphs entitled "Direct Labor," "Material" and "Subcontracts" above.

4.4.3 Computer Usage.

Describe the proposed computer usage, extent of usage, rate(s), and the total cost. Explain the development of the rate(s).

4.4.4 Consultants.

Indicate the specific task requiring consultant services. Identify the proposed consultants, state the proposed hourly/daily rate, the estimated number of hours/days, and any associated costs (such as travel). State whether the consultant has been compensated at the quoted rate for similar services performed in connection with Government contracts.

4.4.5 Licensing and Royalty Information.

If your proposal contains costs for royalties or licenses, indicate the amount and be ready to furnish details.

4.4.6 Other.

Explain and support any additional other direct costs included in the proposal.

4.5 Indirect Costs.

4.5.1 Discuss the development of each proposed indirect expense rate (e.g., labor overhead, material overhead, off-site burden, general and administrative (G&A)). Specifically identify the cost elements included in the base to which each rate is applied. List the indirect expense rates experienced for the past two years. Explain any significant variance between the experienced and proposed rates. Submit evidence of Government approval of each indirect rate if available.

4.5.2 Identify separately any independent research and development expenses included in the G&A rate.

4.5.3 Failure to provide detailed rate information will deem you non-responsive.

5.0 MONTHLY FUNDING PROFILE

Provide a profile of the funding you will require, by month, for all costs and fees you have proposed for Phase E.

6.0 SUPPLEMENTAL BUSINESS/COST INFORMATION

Accounting Calendar.

The proposer will furnish its accounting calendar for each year in which work is anticipated.

7.0 FEE STRUCTURE FOR PHASE E

JPL will consider the extent to which your fee approach incentivizes effective communication (including documentation quality and completeness) and coordination with JPL during Phase E. Provide a proposed fee structure for Phase E; briefly describe how it will incentivize performance.

8.0 Attachments

The section of this RFP entitled “Attachments” consists of those forms and documents containing information applicable to this RFP. Group A Attachments must be completed and attached to your cost proposal.

Attachment	Title and Form Number
A-15 (Phase E)	Cost Elements Breakdown (form 0549)